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AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WASTEWATER MANAGEMENT DIVISION
103 SOUTH MAIN STREET
WATERBURY, VERMONT 05671-0405

FACT SHEET
(October 2002)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

NPDES NO: VT0100188
FILE NO: 01-01
PERMIT NO: 3-1210
PROJECT ID NO: RU98-0028

NAME AND ADDRESS OF APPLICANT:

Town of Middlebury
94 Main Street
Middlebury, VT 05752

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Middlebury Wastewater Treatment Facility
243 Industrial Ave
Middlebury, Vermont

RECEIVING WATER: Otter Creek

CLASSIFICATION: Class B

I. Proposed Action, Type of Facility, and Discharge Location

The above named applicant applied on August 29, 2002 to the Vermont Department of Environmental Conservation for renewal of the permit to discharge into the designated receiving water. The facility is engaged in the treatment of municipal wastewater and receives domestic sewage from the town of Middlebury, as well as industrial wastewater from the Agri-Mark dairy processing facility and other industrial sources. The facility utilizes the sequencing batch reactor (SBR) activated sludge process and includes chemical addition for phosphorus removal and ultraviolet disinfection. The discharge is from the outfall of the Town of Middlebury Wastewater Treatment Facility to Otter Creek.

II. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters is based on state and federal laws and regulations, the discharge permit application, and the recent self-monitoring data.

III. Limitations and Conditions

The effluent limitations of the permit, the monitoring requirements, and any implementation schedule (if required), may be found on the following pages of the permit:

Effluent Limitations:	Page 2 of 18
Monitoring Requirements:	Page 5 of 18

IV. Permit Basis and Explanation of Effluent Limitation Derivation

The Department of Environmental Conservation intends to issue the discharge permit for the Middlebury WWTF, subject to the effluent limitations and other conditions described below.

Effluent Limitations:

Flow - The effluent flow limitation remains at 2.2 MGD, annual average, representing the facility's design flow.

BOD and TSS - The effluent limitations for biochemical oxygen demand (BOD) and total suspended solids (TSS) remain unchanged from the previous permit. The monthly average (30 mg/l) and weekly average (45 mg/l) reflect the minimum level of effluent quality specified for secondary treatment in 40 CFR Part 133. The daily maximum limit (50 mg/l) is based on Department policy. Mass limits are derived by multiplying the concentration limits by the permitted flow. BOD and TSS weekly monitoring requirements are unchanged from the previous permit. Composite sample monitoring has been changed from an eight to a 24-hour period in order to obtain a more representative sample.

***E. coli* Bacteria** - A mixing zone of 200 feet downstream from the discharge point has been established for *E. coli* (see Special Condition I.A2. of the permit). A limit of up to 300 colonies/100 ml may be allowed at the point of discharge provided that the water quality standard of 77 colonies/100ml is met at the end of the 200 foot mixing zone. Section 2-04 of the Vermont Water Quality Standards allows creation of a mixing zone provided that it does not exceed 200 feet from the point of discharge and that it meets effluent limitations at the end of the zone. The mixing zone must 1) not create a public health hazard, 2) not constitute a barrier to the passage of fish or result in an undue adverse effect on fish, aquatic biota or wildlife, and 3) not interfere with any existing use of the river. It was necessary to create a mixing zone in order to allow UV disinfection to be utilized at this treatment facility. Three major manufacturers of UV equipment attested to the fact that the kill from UV disinfection

would not be consistently able to meet the *E. coli* standard of 77 colonies/100 ml regardless of the size of the installation. The Department agreed that from a public health perspective there was less risk involved with approving UV disinfection and establishing a mixing zone than in requiring chlorination/dechlorination with that technology's toxicity risk to aquatic biota. There is at least a 5:1 dilution ratio in the receiving water at the point of discharge, which is a 4 port, 12 foot long diffuser, therefore the 77 colonies/100 ml *E. coli* standard will consistently be met at the end of the mixing zone. The effluent limit and weekly monitoring requirements are unchanged from the previous permit.

pH - The pH limitation remains at 6.5 - 8.5 Standard Units as specified in the Vermont Water Quality Standards. Monitoring remains at daily.

Settleable Solids - The limitation of 1.0 ml/l instantaneous maximum and daily monitoring remain unchanged from the previous permit.

Total Phosphorus - The limitations of 0.8 mg/l, monthly average, and 14.7 lbs/day, monthly average remain unchanged from the previous permit. Weekly monitoring remains unchanged from the previous permit. Composite sample monitoring has been changed from an eight to a 24-hour period in order to obtain a more representative sample.

Ammonia - Ammonia monitoring has been removed from the proposed permit. Self-monitoring results indicated that the levels have been low since the new facility went on-line.

Whole Effluent Toxicity (WET) and Priority Pollutant Testing - 40 CFR Part 122.44(d)(1) requires the Department to assess whether the discharge causes, has the reasonable potential to cause, or contribute to an excursion above any narrative or numeric water quality criteria. Whole Effluent Toxicity testing is being required in accordance with the Vermont Toxic Discharge Control Strategy. The intent of the WET testing is to confirm the results of the WET testing conducted by the Department in 1991 and by the Town in 2000. Those results indicated that this discharge did not have an instream toxic impact. Confirmation that those findings are still valid is required by the Vermont Toxic Discharge Control Strategy at permit renewal. If the results of this test indicate a reasonable potential to cause an instream toxic impact, the Department may require additional WET testing, establish a WET limit, or require a Toxicity Reduction Evaluation.

The proposed permit includes one two-species acute WET test in August or September 2005. In addition, one priority pollutant scan is required to be submitted to the Department by November 30, 2005. Priority pollutants include the volatile organics, pesticides and metals listed in Appendix A of 40 CFR Part 403.

Septage Capacity - (Special Condition 9.) Middlebury's facility must conform to the provisions of 10 V.S.A. §1626a, awards for wastewater treatment plants with a capacity of 250,000 gallons or more per day. The facility's capacity must be sufficient to receive, treat and dispose of septage in a quantity equivalent to the ratio of 4,000 gpd of septage for each one million gpd of facility hydraulic capacity. Thus the facility must reserve 8,800 gpd and its

equivalent BOD for septage.

Waste Management Zone - As defined under 10 V.S.A. §1251(16), a waste management zone is "a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings. Throughout the receiving waters, water quality criteria must be achieved but increased health risks exist due to the authorized discharge".

The proposed permit retains the existing waste management zone (WMZ) that extends downstream from the outfall in Wright Park for approximately one mile to Belden's Dam in Otter Creek.

Combined Sewer Overflows (CSO) - The Town demonstrated during the previous permit period that the Agency's 1990 Combined Sewer Overflow Control Policy is being met with the exception that troubleshooting problems at the Main Pump Station (S/N 010) is still occurring by the Town. The pumps must be capable of handling 6.2 mgd in order to comply with the CSO Policy.

Emergency Power Plan - The Town is required to submit a revised emergency power plan within 30 days of permit issuance. The Department's October 2000 guidance document should be followed.

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